

# Notice of Allowability

Application No.

10/766,547

Examiner

Minh N. Tang

Applicant(s)

SONG ET AL.

Art Unit

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## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 01/27/2004.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☒ The drawings filed on 27 January 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☒ Certified copies of the priority documents have been received in Application No. 10/114,735.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 01/27/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 10/114,735, filed on April 01, 2002.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on January 27, 2004 is considered by the examiner.

### ***Reasons For Allowance***

3. Claims 1-12 are allowed over the art of record.
4. The following is an examiner's statement of reasons for allowance:

Claims 1-4 recite, inter alia, an apparatus for testing a leakage protection reliability of an integrated circuit interconnection, comprising: one serpentine-like pattern comprising a plurality of unit parts and at least one connection part; wherein each of the unit parts includes: two tooth parallel parts laterally spaced apart from the neighboring tooth portions by a certain distance, and extending substantially parallel therewith, a length parallel part formed at a level different from the level of the comb-like pattern and connecting the ends of the two tooth parallel parts and forming turning points with the tooth parallel parts, and two vias connecting the ends of the two tooth parallel parts with the both ends of the length parallel part through an interlayer dielectric layer and spaced apart from the end of the neighboring tooth portion by a minimum design length according to a design rule; wherein the connection part connects the ends of the

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neighboring two tooth parallel parts for connecting the two unit parts; and a second comb-like pattern having the same components as the first comb-like pattern and disposed at an opposite position from the first comb-like pattern.

Claim 5 recites, inter alia, an apparatus for testing a leakage protection reliability of an integrated circuit interconnection, comprising: a serpentine-like pattern comprising tooth parallel parts, first length parallel parts, second length parallel parts, and vias; wherein the tooth portions having the same lengths protrude from the length portion, substantially parallel with one another, running substantially parallel with and interleaving with the neighboring tooth portions of the other comb-like pattern; wherein the tooth parallel parts are formed at the same level with the pair of the comb-like patterns, spaced apart from the neighboring tooth portions by a defined distance and extending substantially parallel therewith; the first length parallel part is present at a level spaced from the level of the comb-like patterns by an interlayer dielectric layer and connecting the ends of the two tooth parallel parts adjacent to the comb-like pattern in the left or right side of the serpentine-like pattern; the second length parallel part is present at a level spaced from the level of the comb-like patterns by an interlayer dielectric layer and connecting the ends of the two tooth parallel parts adjacent to the comb-like pattern in the right or left side of the serpentine-like pattern; and the vias connect the ends of the first and second length parallel parts with the both ends of the tooth parallel part through an interlayer dielectric layer at the both ends of the tooth parallel part.

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Claims 6-12 recite, inter alia, an apparatus for testing a leakage protection reliability of an integrated circuit interconnection, comprising: a three-dimensional serpentine pattern including: tooth parallel parts integrated between the comb patterns in a first level layer, connection parts traversing the tooth parallel parts in a second level layer, and vias connecting the tooth parallel parts to the connection parts.

The art of record does not disclose the above limitations, nor would it be obvious to modify the art of record so as to include the above limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minh N. Tang whose telephone number is (571) 272-1971. The examiner can normally be reached on M-F (7:30-4:00).

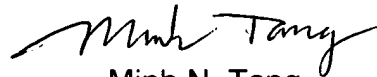
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Tokar can be reached on (571) 272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Minh N. Tang". The signature is fluid and cursive, with the first name "Minh" and last name "Tang" clearly distinguishable.

Minh N. Tang  
Primary Examiner  
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8/26/04